

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Applicant acknowledges with appreciation the indication in the pending Office Action that claims 15-22, 24, and 25 are allowed and that claims 2-8, 13, and 14 are allowable.

Claims 1-26 have been cancelled in favor of new claims 26-51, which better define the subject matter Applicant regards as the invention. The subject matter defined by each of new claims 25-50 generally corresponds to that defining original claims 1-25, respectively. Support for the features recited in the new claims is provided by original claims 1-25 and Figs. 6 and 13-19 and their accompanying descriptions in the specification. The new claims are considered non-narrowing relative to the original claims, and no estoppel should be deemed to attach thereto. The new claims overcome the rejection of claim 9 under 35 USC §112, second paragraph.

Claims 1, 9-11, and 23 were rejected, under 35 USC §103(a), as being unpatentable over Applicant's Description of Related Art (ADRA) in view of Sokal et al. (US 3,900,823). Claim 12 was rejected, under 35 USC §103(a), as being unpatentable over the ADRA in view of Sokal and further in view of Kawano et al. (US 5,774,797). To the extent the rejections may be deemed

applicable to new claims 26, 34-36, and 48, the Applicant respectfully traverses.

The combined teachings of the ADRA and Sokal fail to teach or suggest, alone or together, the present claimed features of: (1) an attenuator that attenuates an output signal of each of a plurality of amplifiers and (2) an error detector that calculates an input-output error of the amplifiers from an input signal to the amplifiers and the output signal of the attenuator.

Specifically, the ADRA does not disclose an attenuator but, instead, discloses that all of the transmit power of a radio apparatus is sent to a measuring apparatus 7 for measurement. Moreover, the ADRA does not disclose an error detector that calculates an input-output error of a plurality of amplifiers from an input signal to the amplifiers and an output signal of the attenuator. Instead, the measuring apparatus disclosed in Fig. 1 measures only the amplifier's output signal and compares these measurements to predetermined expected values (specification page 5, lines 9-13). Therefore, the input signals to the amplifiers must be calibrated to correspond to the predetermined expected values (specification page 4, line 27, through page 5, line 4). As a result, the base station cannot transmit an amplified information signal from this radio

apparatus while simultaneously measuring characteristics of the amplified signal (specification page 9, lines 13-20).

Sokal discloses in Fig. 1 a communication system having a single transmission system. In this system, an error detector 2, 4, and 5 measures the difference in amplitude between a signal provided to the input of an amplifier 1 and an attenuated version of the signal output from the amplifier. Additionally, Sokal discloses a gain control device 8 that adjusts the gain of amplifier 1 in accordance with the detected error between the amplifier's input and output signals.

Fig. A of attached Exhibit 1 illustrates the relevant features of Sokal's Fig. 1 more simply. Fig. B of Exhibit 1 illustrates an application of Sokal's structure to a communication system having a plurality of transmission systems. As may be determined by examination of Fig. B, this structure includes a separate error detector and attenuator for each amplifier.

By contrast to the structures of Figs. A and B, the present claimed invention, as generally represented in Fig. C of Exhibit 1, requires only one attenuator and one error detector to correct the amplification errors produced by an amplifier in each of a plurality of transmission systems. This structure reduces the

number of components required relative to the structure illustrated in Fig. B.

Moreover, the structure of Fig. C dynamically maintains constant relative phase and amplitude differences among the elements of an array antenna so that the antenna can transmit with high directivity. This structure does not require a precise static adjustment of each amplifier's phase and amplitude characteristics.

By contrast to the present claimed invention, the structure of Fig. B cannot maintain constant relative phase and amplitude differences between the antenna elements unless the phase and amplitude characteristics of all of the attenuators are precisely adjusted in a unified manner. Without such precise and unified adjustment, the structure of Fig. B cannot transmit signals with the high directivity achievable with the structure of Fig. C.

In accordance with the above discussion, Applicant submits that the ADRA and Sokal, alone or in combination, do not teach or suggest the subject matter defined by claim 26. Therefore, allowance of claim 26 and all claims dependent therefrom is warranted.

Claim 48, which corresponds to original claim 23, similarly recites the above described features distinguishing claim 26 from the applied references. For similar reasons that claim 26

patentably distinguishes over the combined teachings of the ADRA and Sokal, so to does claim 48. Therefore, allowance of claim 48 is warranted.

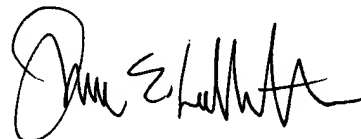
Independent claims 32, 33, 40, 41, and 44-50 correspond to original claims 7, 8, 15, 16, and 19-25, respectively, which were identified as allowed or allowable in the Office Action.

Independent claim 51 recites features of apparatus claim 40, though with respect to a method. Therefore, allowance of independent claims 32, 33, 40, 41, and 44-51 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



James E. Ledbetter
Registration No. 28,732

Date: June 14, 2004
JEL/DWW/att
Attorney Docket No. L9289.01103
STEVENS DAVIS, MILLER & MOSHER, L.L.P.
1615 L Street, N.W., Suite 850
P.O. Box 34387
Washington, D.C. 20043-4387
Telephone: (202) 785-0100
Facsimile: (202) 408-5200